

Rec'd PCT/PTO 51 MAY 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

10/537164

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number  
WO 2004/047870 A1

(51) International Patent Classification<sup>7</sup>: A61K 47/48

(21) International Application Number:  
PCT/GB2003/005157

(22) International Filing Date:  
28 November 2003 (28.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0227738.2 28 November 2002 (28.11.2002) GB

(71) Applicant (for all designated States except US): THE  
UNIVERSITY OF LIVERPOOL [GB/GB]; Senate  
House, Abercromby Square, Liverpool L69 3BX (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): WILSON, Robert  
[GB/GB]; Department of Chemistry, The University of  
Liverpool, Crown Street, Liverpool L69 7ZD (GB).

(74) Agent: W.P.THOMPSON & CO.; Coopers Building,  
Church Street, Liverpool, L1 3AB (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,  
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,  
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

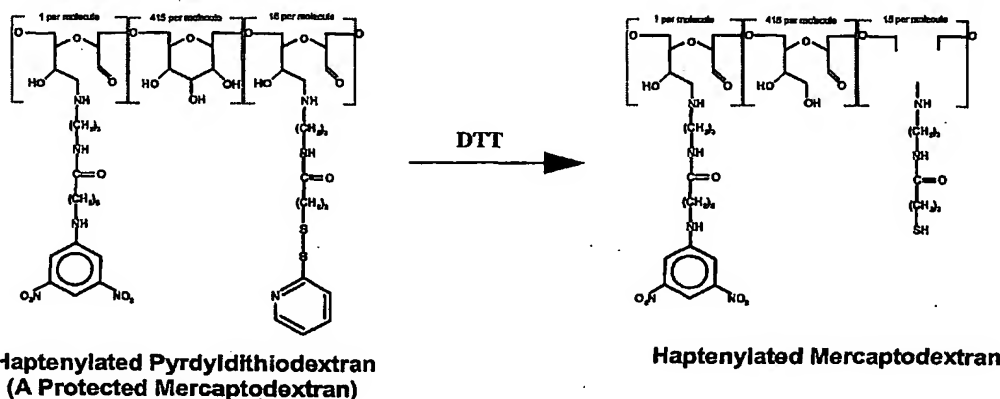
(84) Designated States (regional): ARIPO patent (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: NANOPARTICLE CONJUGATES AND METHOD OF PRODUCTION THEREOF



(57) Abstract: The present invention provides a method for the preparation of nanoparticle conjugates comprising: protocols for synthesizing intermediate product molecules by introducing known numbers of two or more substituents into a flexible hydrophilic polymer, where one substituent is capable, optionally after deprotection, of binding to a nanoparticle, and where the other substituents are capable of participating in analytical or other applications; protocols for contacting the intermediate product molecules with nanoparticles for a period of time and under conditions effective to allow the binding of a known number of the intermediate product molecules to each nanoparticle to provide the nanoparticle conjugate.

WO 2004/047870 A1